

**From:** [Tracy Fischbach \(via Google Docs\)](#)  
**To:** [greg\\_siekaniec@fws.gov](mailto:greg_siekaniec@fws.gov)  
**Cc:** [Doug\\_Damberg@fws.gov](mailto:Doug_Damberg@fws.gov); [karen\\_clark@fws.gov](mailto:karen_clark@fws.gov); [socheata\\_lor@fws.gov](mailto:socheata_lor@fws.gov); [Steve\\_Berendzen@fws.gov](mailto:Steve_Berendzen@fws.gov); [Joanna\\_Fox@fws.gov](mailto:Joanna_Fox@fws.gov)  
**Subject:** 20171113\_EA\_ARC 1002 Reg Change\_DRAFT.docx - Invitation to edit  
**Date:** Monday, November 13, 2017 9:56:42 PM

---

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 [20171113\\_EA\\_ARC 1002 Reg Change\\_DRAFT.docx](#)



This is the draft EA for the Arctic 1002 reg change. By using Google Docs we can all be editing and/or commenting simultaneously. You will notice that there is currently a lot of language about Kodiak in this document. I've stolen another EA in order to get this more robust format. Info will be changing constantly until we turn it in on Friday. When you click on this link you will get the latest and greatest. If you want a prior version, please let me know. Google keeps tracks of earlier versions automatically. Thanks! Don't hesitate to send me a chat or call if you have questions. - Tracy

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**Cc:** [john\\_w\\_martin@fws.gov](mailto:john_w_martin@fws.gov); [stephanie\\_brady@fws.gov](mailto:stephanie_brady@fws.gov)  
**Subject:** 20171113\_EA\_ARC 1002 Reg Change\_DRAFT.docx  
**Date:** Monday, November 13, 2017 9:58:45 PM

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Hi guys,

Since this must be updated by Friday, we do not have time to email versions of this document around. Please feel to edit. I'll be doing my best to integrate info from the 1983 EIS, the state proposal from 2015, and EAs from the NPRA.

We can catch up when you are in. This version is due to HQ by Friday.

-T

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**From:** [Tracy Fischbach \(via Google Docs\)](#)  
**To:** [tracy\\_fischbach@fws.gov](mailto:tracy_fischbach@fws.gov)  
**Cc:** [peter\\_wikoff@fws.gov](mailto:peter_wikoff@fws.gov)  
**Subject:** 20171113\_EA\_ARC 1002 Reg Change\_DRAFT  
**Date:** Wednesday, November 15, 2017 11:56:22 AM

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**From:** [Dufford, Sheila](#)  
**To:** [Roger Kaye](#)  
**Subject:** Fwd: 20171113\_EA\_ARC 1002 Reg Change\_DRAFT - Invitation to edit  
**Date:** Thursday, November 16, 2017 11:33:27 AM

---

**Sheila J. Dufford**  
**Biologist / GIS Specialist**  
**Yukon Flats National Wildlife Refuge**  
**101 12th Avenue, Room 264**  
**Fairbanks, AK 99701**  
**907-456-0307**  
**[sheila\\_dufford@fws.gov](mailto:sheila_dufford@fws.gov)**  
**[http://www.fws.gov/refuge/Yukon\\_Flats/](http://www.fws.gov/refuge/Yukon_Flats/)**

*There are only two ways to live your life. One is as though nothing is a miracle. The other is as though everything is a miracle. - Albert Einstein*

----- Forwarded message -----

From: **Tracy Fischbach (via Google Docs)** <[drive-shares-noreply@google.com](mailto:drive-shares-noreply@google.com)>  
Date: Thu, Nov 16, 2017 at 9:07 AM  
Subject: 20171113\_EA\_ARC 1002 Reg Change\_DRAFT - Invitation to edit  
To: [sheila\\_dufford@fws.gov](mailto:sheila_dufford@fws.gov)

tracy\_fischbach@fws.gov has invited you to **edit** the following document:

 [20171113\\_EA\\_ARC 1002 Reg Change\\_DRAFT](#)

 Hi Sheila, Here's the active document that we are working on. Think about what maps you think would be helpful and create as you see fit. I need to write a short section now, but I can talk in a little bit.

Thanks! -Tracy

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**To:** [margaret\\_perdue@fws.gov](mailto:margaret_perdue@fws.gov)  
**Subject:** 20171113\_EA\_ARC 1002 Reg Change\_DRAFT  
**Date:** Thursday, November 16, 2017 1:54:41 PM

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**Cc:** [greg\\_siekaniec@fws.gov](#); [steve\\_berendzen@fws.gov](#); [stephen\\_arthur@fws.gov](#); [john\\_w\\_martin@fws.gov](#); [socheata\\_lor@fws.gov](#); [joanna\\_fox@fws.gov](#); [brian\\_mccaffery@fws.gov](#); [ryan\\_mollnow@fws.gov](#); [jenifer\\_kohout@fws.gov](#); [ryan\\_r\\_wilson@fws.gov](#); [margaret\\_perdue@fws.gov](#); [edward\\_decleva@fws.gov](#); [sheila\\_dufford@fws.gov](#); [karen\\_clark@fws.gov](#); [stephanie\\_brady@fws.gov](#); [wendy\\_loya@fws.gov](#); [peter\\_wikoff@fws.gov](#); [mike\\_gieryc@sol.doi.gov](#); [doug\\_damberger@fws.gov](#); [christopher\\_putnam@fws.gov](#)  
**Subject:** 20171113\_EA\_ARC 1002 Reg Change\_DRAFT  
**Date:** Thursday, November 16, 2017 2:52:19 PM

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Hi all,

I will be downloading the active document at 2 pm for final touch-ups in Word in order to prepare it for emailing. Please be sure your edits are included by then. Edits included after 2pm will NOT be captured.

This has been a herculean effort and I thank you all for stepping up.

Thanks all!

-Tracy

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**From:** [Tracy Fischbach \(via Google Docs\)](#)  
**To:** [roger\\_kaye@fws.gov](mailto:roger_kaye@fws.gov)  
**Subject:** 20171113\_EA\_ARC 1002 Reg Change\_DRAFT - Invitation to edit  
**Date:** Thursday, November 16, 2017 2:53:39 PM

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Hi Roger, We have been adding language about "wilderness values" please jump in if you can and add your ideas and description for the 1002 area. It's in section 3.3.9. I will be pulling the document at 2 pm. So if you can do something by then, I would greatly appreciate it. Thank you! -Tracy

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**To:** [tracy\\_fischbach@fws.gov](mailto:tracy_fischbach@fws.gov)  
**Cc:** [greg.siekaniec@fws.gov](mailto:greg.siekaniec@fws.gov); [steve.berendzen@fws.gov](mailto:steve.berendzen@fws.gov); [stephen.arthur@fws.gov](mailto:stephen.arthur@fws.gov); [nicole.gustine@fws.gov](mailto:nicole.gustine@fws.gov); [john.w.martin@fws.gov](mailto:john.w.martin@fws.gov); [socheata.lor@fws.gov](mailto:socheata.lor@fws.gov); [joanina.fox@fws.gov](mailto:joanina.fox@fws.gov); [brian.mccaffery@fws.gov](mailto:brian.mccaffery@fws.gov); [ryan.mollnow@fws.gov](mailto:ryan.mollnow@fws.gov); [jenifer.kohout@fws.gov](mailto:jenifer.kohout@fws.gov); [ryan.r.wilson@fws.gov](mailto:ryan.r.wilson@fws.gov); [margaret.perdue@fws.gov](mailto:margaret.perdue@fws.gov); [edward.declava@fws.gov](mailto:edward.declava@fws.gov); [sheila.dufford@fws.gov](mailto:sheila.dufford@fws.gov); [roger.kaye@fws.gov](mailto:roger.kaye@fws.gov); [karen.clark@fws.gov](mailto:karen.clark@fws.gov); [stephanie.brady@fws.gov](mailto:stephanie.brady@fws.gov); [wendy.loya@fws.gov](mailto:wendy.loya@fws.gov); [peter.wikoff@fws.gov](mailto:peter.wikoff@fws.gov); [mike.gieryc@sol.doi.gov](mailto:mike.gieryc@sol.doi.gov); [doug.damberg@fws.gov](mailto:doug.damberg@fws.gov); [christopher.putnam@fws.gov](mailto:christopher.putnam@fws.gov)  
**Subject:** 20171113\_EA\_ARC 1002 Reg Change\_DRAFT  
**Date:** Thursday, November 16, 2017 4:18:30 PM

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**To:** [ryan\\_mollnow@fws.gov](#)  
**Cc:** [greg\\_siekaniec@fws.gov](#); [steve\\_berendzen@fws.gov](#); [stephen\\_arthur@fws.gov](#); [nicole\\_gustine@fws.gov](#); [john\\_w\\_martin@fws.gov](#); [socheata\\_lor@fws.gov](#); [joanina\\_fox@fws.gov](#); [brian\\_mccaffery@fws.gov](#); [jenifer\\_kohout@fws.gov](#); [ryan\\_r\\_wilson@fws.gov](#); [margaret\\_perdue@fws.gov](#); [edward\\_decleva@fws.gov](#); [sheila\\_dufford@fws.gov](#); [roger\\_kaye@fws.gov](#); [karen\\_clark@fws.gov](#); [stephanie\\_brady@fws.gov](#); [wendy\\_loya@fws.gov](#); [peter\\_wikoff@fws.gov](#); [mike\\_giervic@sol.doi.gov](#); [doug\\_damberg@fws.gov](#); [christopher\\_putnam@fws.gov](#)  
**Subject:** 20171113\_EA\_ARC 1002 Reg Change\_DRAFT  
**Date:** Thursday, November 16, 2017 4:18:36 PM

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**From:** [Fischbach, Tracy](#)  
**To:** [Kaye, Roger](#)  
**Subject:** Re: 20171113\_EA\_ARC 1002 Reg Change\_DRAFT - Invitation to edit  
**Date:** Thursday, November 16, 2017 4:30:17 PM

---

Done. Thank you!

Tracyann S Fischbach  
Natural Resources Planner  
National Wildlife Refuge System - Region 7  
Division of Natural Resources & Conservation Planning  
(907) 786-3369

Hours: Mon - Thurs 9:15 am to 3:15 pm

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[FWS Region 7 Land Mapper \(FWS version\)](#)

[FWS Region 7 Land Mapper \(Public version\)](#)

[Region 7 GeoPDF Map Portal](#)

On Thu, Nov 16, 2017 at 2:27 PM, Kaye, Roger <[roger\\_kaye@fws.gov](mailto:roger_kaye@fws.gov)> wrote:

hi. I added text on Wilderness Values, and added a few words on the Wilderness impacts section. Also, since some of the text is drawn from my book, you might want to include it in the references. If so, its . . . Kaye, R.W. 2006. Last great wilderness: The campaign to establishing the arctic national wildlife refuge. Fairbanks, AK: University of Alaska Press.

  
**Roger Kaye**  
Arctic National Wildlife Refuge  
[101 12th Ave, Room 236](#)  
[Fairbanks, AK 99701](#)  
Anchorage, AK 99503  
#: 907-456-0405 | e: [Roger\\_Kaye@fws.gov](mailto:Roger_Kaye@fws.gov)

---

**Celebrate the 50th Anniversary of the  
Wilderness Act:**

<https://www.facebook.com/AlaskaWild50>

On Thu, Nov 16, 2017 at 12:53 PM, Tracy Fischbach (via Google Docs) <[drive-shares-](#)

[noreply@google.com](mailto:noreply@google.com) wrote:

[tracy\\_fischbach@fws.gov](mailto:tracy_fischbach@fws.gov) has invited you to [edit](#) the following document:

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Hi Roger, We have been adding language about "wilderness values" please jump in if you can and add your ideas and description for the 1002 area. It's in section 3.3.9. I will be pulling the document at 2 pm. So if you can do something by then, I would greatly appreciate it. Thank you! -Tracy

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**To:** [Doug\\_Damberg@fws.gov](mailto:Doug_Damberg@fws.gov)  
**Subject:** 20171116\_EA\_ARC 1002 Reg Change\_DRAFT Edit Copy - Invitation to edit  
**Date:** Thursday, November 16, 2017 5:16:01 PM

---

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 Here's the version for editing tomorrow am. I'll be here in the morning.

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**To:** [socheata\\_lor@fws.gov](#)  
**Cc:** [Doug\\_Damberg@fws.gov](#)  
**Subject:** 20171117\_EA\_ARC 1002 Reg Change\_DRAFT\_Edit Copy - Invitation to edit  
**Date:** Friday, November 17, 2017 12:29:02 PM

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Here's v3 that Greg edited. It's all yours.

-T

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**To:** [sara\\_boario@fws.gov](mailto:sara_boario@fws.gov)  
**Cc:** [andrea\\_medeiros@fws.gov](mailto:andrea_medeiros@fws.gov)  
**Subject:** 20171117\_EA\_ARC 1002 Reg Change\_DRAFT\_Edit Copy - Invitation to edit  
**Date:** Friday, November 17, 2017 12:44:48 PM

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**From:** [Campbell, Douglas](#)  
**To:** [Stephanie Brady](#); [Tracy Fischbach](#)  
**Subject:** Subsistence papers relating to Arctic NWR etc.  
**Date:** Friday, November 17, 2017 12:58:37 PM  
**Attachments:** [EA for off shore lease exoloration.pdf](#)  
[Kaktovik Subsistence.pdf](#)

---

Here are 2 of the papers that I mentioned attached and below is the reference to a third. A fourth will be shared in google drive as the size is too large.

I think they will be valuable in the evaluation of the effects of oil and gas development on the Arctic NWR on subsistence and the natural resouces associated with subsistence use.

*Jacobsen, M. J. and C. Wentworth, 1982. *Kaktovik Subsistence Land Use Values through Time in the Arctic National Wildlife Refuge Area*. USFWS Northern Alaska Ecological Services.*

Doug Campbell  
Chief Division of Realty  
U.S. Fish and Wildlife Service  
phone: (907) 786-3907  
fax: (907) 786-3901

**From:** [Burkart, Greta](#)  
**To:** [Fischbach, Tracy](#)  
**Subject:** Re: 20171113\_EA\_ARC 1002 Reg Change\_DRAFT  
**Date:** Friday, November 17, 2017 2:19:15 PM

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Thanks -- I hope that in the end there is no need for the EA!

Greta

Greta Burkart, PhD  
Aquatic Ecologist  
US Fish and Wildlife Service  
Arctic National Wildlife Refuge and Alaska Refuges Inventory and Monitoring Program  
101 12 th Ave Rm 236  
Fairbanks, AK 99701  
ph: (907) 456-0519  
fax: (907) 456-0428  
email: [greta\\_burkart@fws.gov](mailto:greta_burkart@fws.gov)  
[www.facebook.com/arcticnationalwildliferefuge](http://www.facebook.com/arcticnationalwildliferefuge)

On Fri, Nov 17, 2017 at 9:46 AM, Fischbach, Tracy <[tracy\\_fischbach@fws.gov](mailto:tracy_fischbach@fws.gov)> wrote:  
| Will do. This isn't over yet, so I'm sure you'll be called upon again. Thanks! -Tracy

Tracyann S Fischbach  
Natural Resources Planner  
National Wildlife Refuge System - Region 7  
Division of Natural Resources & Conservation Planning  
(907) 786-3369

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Handbook for Girl Scouts by W. J. Hoxie

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[FWS Region 7 Land Mapper \(FWS version\)](#)  
[FWS Region 7 Land Mapper \(Public version\)](#)  
[Region 7 GeoPDF Map Portal](#)

On Fri, Nov 17, 2017 at 5:27 AM, Burkart, Greta <[greta\\_burkart@fws.gov](mailto:greta_burkart@fws.gov)> wrote:  
| Hi Tracy,

I did end up writing the environmental consequences on water resources sections and want  
to make sure I am included on the EA and on future emails to revise drafts etc.

Thanks,

Greta

Greta Burkart, PhD  
Aquatic Ecologist  
US Fish and Wildlife Service  
Arctic National Wildlife Refuge and Alaska Refuges Inventory and Monitoring Program  
[101 12 th Ave Rm 236](#)  
[Fairbanks, AK 99701](#)  
[ph: \(907\) 456-0519](#)  
[fax: \(907\) 456-0428](#)  
[email: \[greta\\\_burkart@fws.gov\]\(mailto:greta\_burkart@fws.gov\)](#)  
[www.facebook.com/arcticnationalwildliferefuge](#)

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From: **Perdue, Margaret** <[margaret\\_perdue@fws.gov](mailto:margaret_perdue@fws.gov)>  
Date: Thu, Nov 16, 2017 at 3:44 PM  
Subject: Fwd: 20171113\_EA\_ARC 1002 Reg Change\_DRAFT  
To: John Trawicki <[john\\_trawicki@fws.gov](mailto:john_trawicki@fws.gov)>, "Burkart, Greta"  
<[greta\\_burkart@fws.gov](mailto:greta_burkart@fws.gov)>

Here's what was submitted...

Thanks for all the input

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From: **Tracy Fischbach (via Google Docs)** <[drive-shares-noreply@google.com](mailto:drive-shares-noreply@google.com)>  
Date: Thu, Nov 16, 2017 at 2:18 PM  
Subject: 20171113\_EA\_ARC 1002 Reg Change\_DRAFT  
To: [margaret\\_perdue@fws.gov](mailto:margaret_perdue@fws.gov)  
Cc: [greg\\_siekaniec@fws.gov](mailto:greg_siekaniec@fws.gov), [steve\\_berendzen@fws.gov](mailto:steve_berendzen@fws.gov), [stephen\\_arthur@fws.gov](mailto:stephen_arthur@fws.gov),  
[nicole\\_gustine@fws.gov](mailto:nicole_gustine@fws.gov), [john\\_w\\_martin@fws.gov](mailto:john_w_martin@fws.gov), [socheata\\_lor@fws.gov](mailto:socheata_lor@fws.gov),  
[joanna\\_fox@fws.gov](mailto:joanna_fox@fws.gov), [brian\\_mccaffery@fws.gov](mailto:brian_mccaffery@fws.gov), [ryan\\_mollnow@fws.gov](mailto:ryan_mollnow@fws.gov),  
[jenifer\\_kohout@fws.gov](mailto:jenifer_kohout@fws.gov), [ryan\\_r\\_wilson@fws.gov](mailto:ryan_r_wilson@fws.gov), [edward\\_decleva@fws.gov](mailto:edward_decleva@fws.gov),  
[sheila\\_dufford@fws.gov](mailto:sheila_dufford@fws.gov), [roger\\_kaye@fws.gov](mailto:roger_kaye@fws.gov), [karen\\_clark@fws.gov](mailto:karen_clark@fws.gov),  
[stephanie\\_brady@fws.gov](mailto:stephanie_brady@fws.gov), [wendy\\_loya@fws.gov](mailto:wendy_loya@fws.gov), [peter\\_wikoff@fws.gov](mailto:peter_wikoff@fws.gov),  
[mike.gieryc@sol.doi.gov](mailto:mike.gieryc@sol.doi.gov), [doug\\_damberg@fws.gov](mailto:doug_damberg@fws.gov), [christopher\\_putnam@fws.gov](mailto:christopher_putnam@fws.gov)

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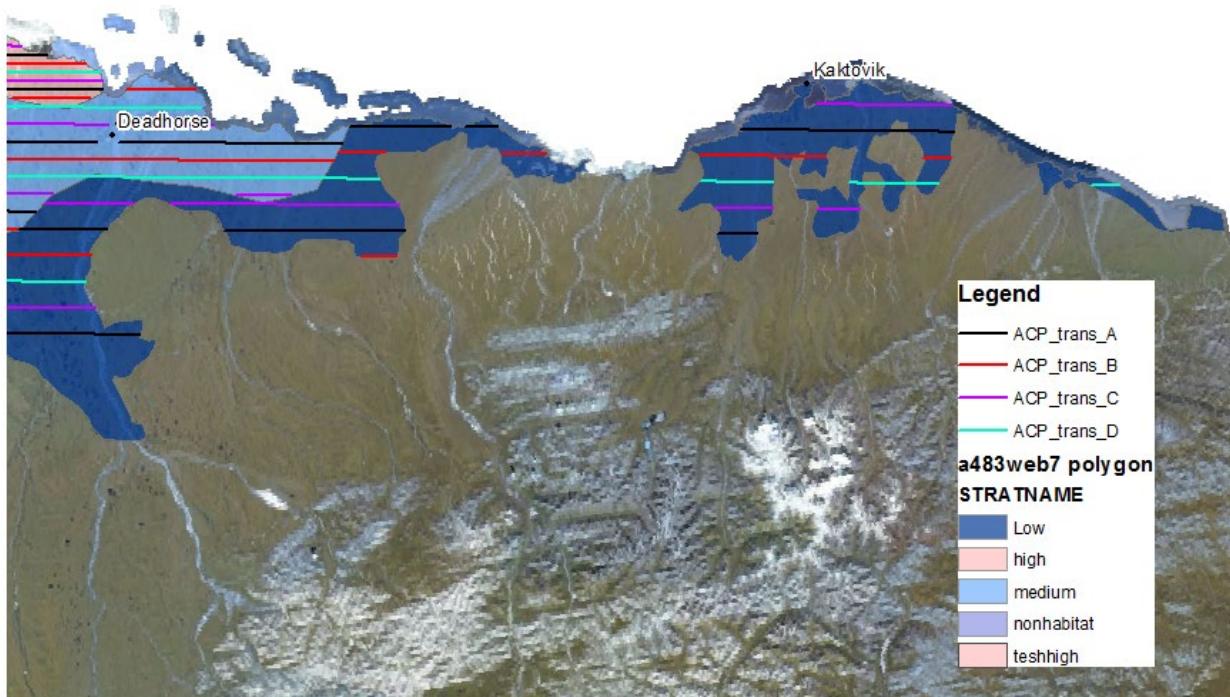
Meg Perdue, Water Quality Specialist  
Water Resources Branch - National Wildlife Refuge System  
U.S. Fish & Wildlife Service Regional Office MS 235  
[1011 E. Tudor Rd](http://1011 E. Tudor Rd)  
[Anchorage, AK 99503](http://Anchorage, AK 99503)  
phone: 907-786-3421 fax: 907-786-3976  
email: [margaret\\_perdue@fws.gov](mailto:margaret_perdue@fws.gov)

**From:** [Swaim\\_Michael](#)  
**To:** [Latty\\_Christopher](#)  
**Subject:** Re: ACP data on CAGO  
**Date:** Friday, November 17, 2017 2:26:22 PM  
**Attachments:** [image.png](#)  
[image.png](#)  
[image.png](#)  
[image.png](#)  
[image.png](#)  
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[image.png](#)  
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Chris,

I'm sending the flightlines for the ACP survey. This shapefile has the entire 4-year rotating panel for this survey. You'll need to look at the TransectID field in the attribute table to determine which transects are sampled in a given year. We surveyed the AB series in 2017 (AB1-AB68), and in 2018 we'll fly the AC series. The surveyed area on the refuge is part of the low-density strata. Sampling intensity is low in this area, with only 1-2 transects surveyed annually:



Let me know if you have questions or need something different.

Cheers,

michael

On Thu, Nov 16, 2017 at 10:09 PM, Latty, Christopher <[christopher\\_latty@fws.gov](mailto:christopher_latty@fws.gov)> wrote:  
Hi Michael,

I don't believe I have access to your T drive (but I'm sure Heather does!!).

Cheers  
Chris

On Thu, Nov 16, 2017 at 6:03 PM, Swaim, Michael <[michael\\_swaim@fws.gov](mailto:michael_swaim@fws.gov)> wrote:  
Heather,

The whole 4-year survey panel of transects for the ACP [including transect series A (2016), series B (2017), series C (2018), and series D (2019)], is located at: T:\AerialSurveys\ArcticCoastalPlain\seriesA\_D. The transect file is named "ACPtransA\_D.shp." There is another file called "ACPptsA\_D.shp" for the transect endpoints.

On Thu, Nov 16, 2017 at 4:29 PM, Latty, Christopher <[christopher\\_latty@fws.gov](mailto:christopher_latty@fws.gov)> wrote:  
Hi Michael,

Thanks again for sending me the layers!

I've got one more ask. We have been getting lots of questions for the 1002 area of the Refuge, it it would be super helpful if I had a layer of the flight lines for the ACP survey on the Refuge (both the section near the Canning River and near Barter). If it's not too much trouble, would you mind sending those GIS layers? I'm assuming it will be easier for you to just send the full layer of flight-lines across the ACP, and that would be perfect, as then I can show the various interested parties the differences in coverage. And (of course), I won't share the file and would instead have folks to contact someone in your office if they have specific questions about the surveys.

Cheers  
Chris

On Wed, Oct 25, 2017 at 5:02 PM, Swaim, Michael <[michael\\_swaim@fws.gov](mailto:michael_swaim@fws.gov)> wrote:  
No problem Chris.

I'm sending all three density layers. I hope I got everything when I zipped these together.

Let me know if something doesn't work,

Michael

On Wed, Oct 25, 2017 at 4:37 PM, Latty, Christopher <[christopher\\_latty@fws.gov](mailto:christopher_latty@fws.gov)> wrote:  
If they exist and you don't have to create them, please send what you have. I guess what I'm hoping they might be useful for is understanding where densities are the highest across the ACP and also how they might have changed over time. but please don't worry about it if it will create extra work for you.

Sent from my iPhone

On Wed, Oct 25, 2017 at 4:30 PM, Swaim, Michael <[michael\\_swaim@fws.gov](mailto:michael_swaim@fws.gov)> wrote:  
Sure,

Which one would you like?

By the way, I just noticed that the first density surface was labeled wrong - the time series is 2012-2015, not 2009-2015.

The 2012-2015 surface is a raster and the other two are polygons. The polygon output resolution was set higher, although these were created from 10m x 10m grid-based interpolation. Dave and I were just looking at the raw aerial obs (1992-2002 vs after) and you can see how the population grew.

Michael

On Wed, Oct 25, 2017 at 4:20 PM, Latty, Christopher <[christopher\\_latty@fws.gov](mailto:christopher_latty@fws.gov)> wrote:  
I guess one quick thing - if it's easy - could you send me those density layers for indicated breeding cago for the entire survey area?

Thanks much!!

Sent from my iPhone

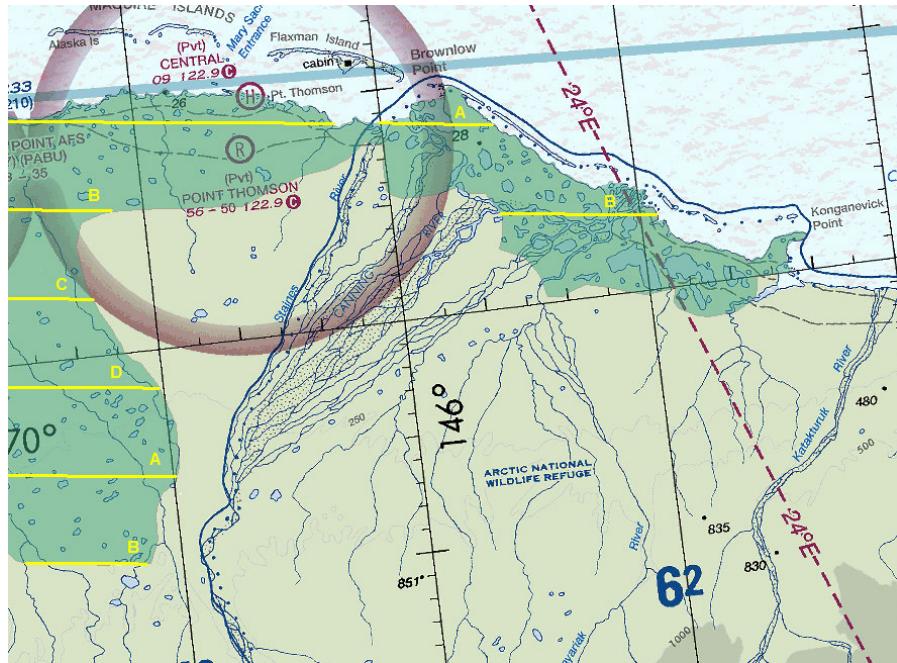
On Wed, Oct 25, 2017 at 4:16 PM, Latty, Christopher <[christopher\\_latty@fws.gov](mailto:christopher_latty@fws.gov)> wrote:  
Thanks much! I really do appriecate it!! I'm headed to my son's hockey practice in a few minutes, but might have a few followup questions as soon.

Cheers

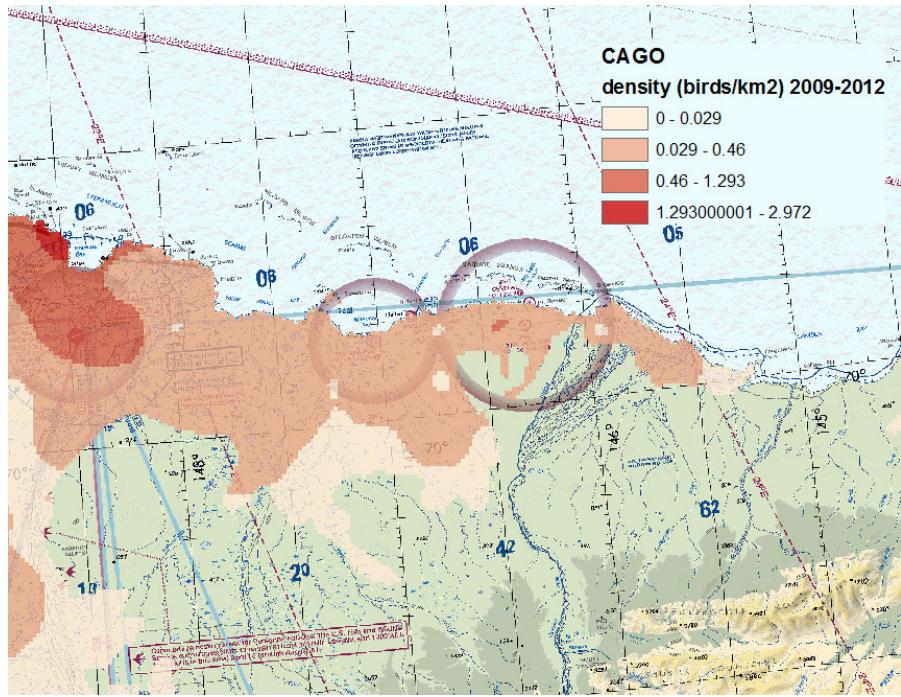
Chris

On Wed, Oct 25, 2017 at 3:49 PM, Swaim, Michael <[michael\\_swaim@fws.gov](mailto:michael_swaim@fws.gov)> wrote:  
Hi Chris,

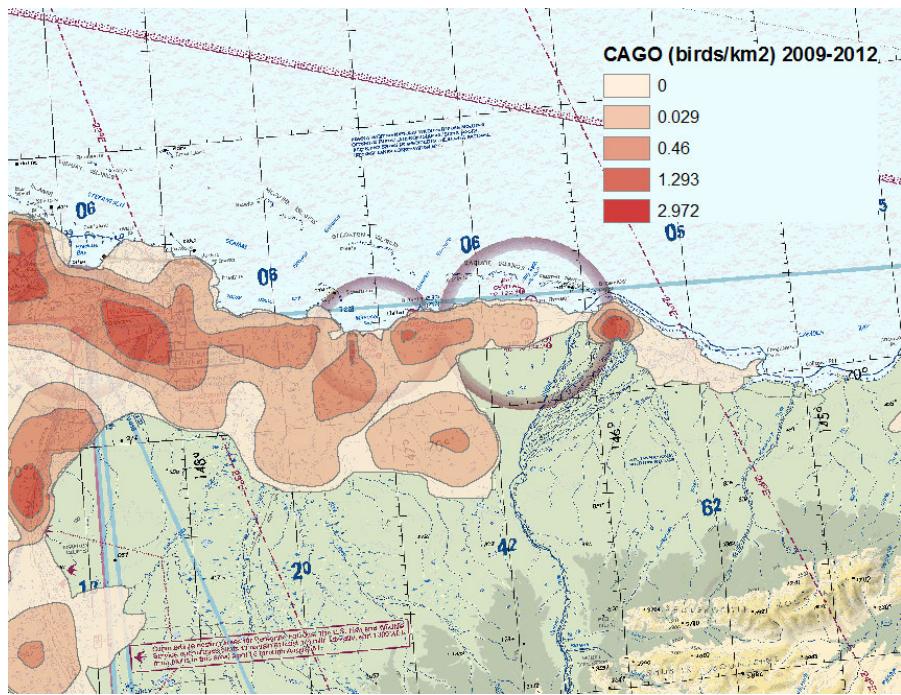
I can't believe Dave sent this message five days ago. It seems like just yesterday. Where does the time go? Anyway, I was just running some numbers for the ACP and thought of this. I'm not sure if you've seen the survey design for this or not, but the following map is a close up of the area that I understand you're interested in. The green shaded area shows the low density strata, and the yellow lines depict the aerial transects. We utilize a 4-year rotating panel design on this survey. The transect labeled "A" was surveyed in 2016 and transect "B" was surveyed this year. In 2018 and 2019, we'll survey transects C and D, and then in 2020 we'll be back on the A series again. Transects are vertically spaced 7 km apart. This is pretty infrequent low-intensity sampling for your purpose.

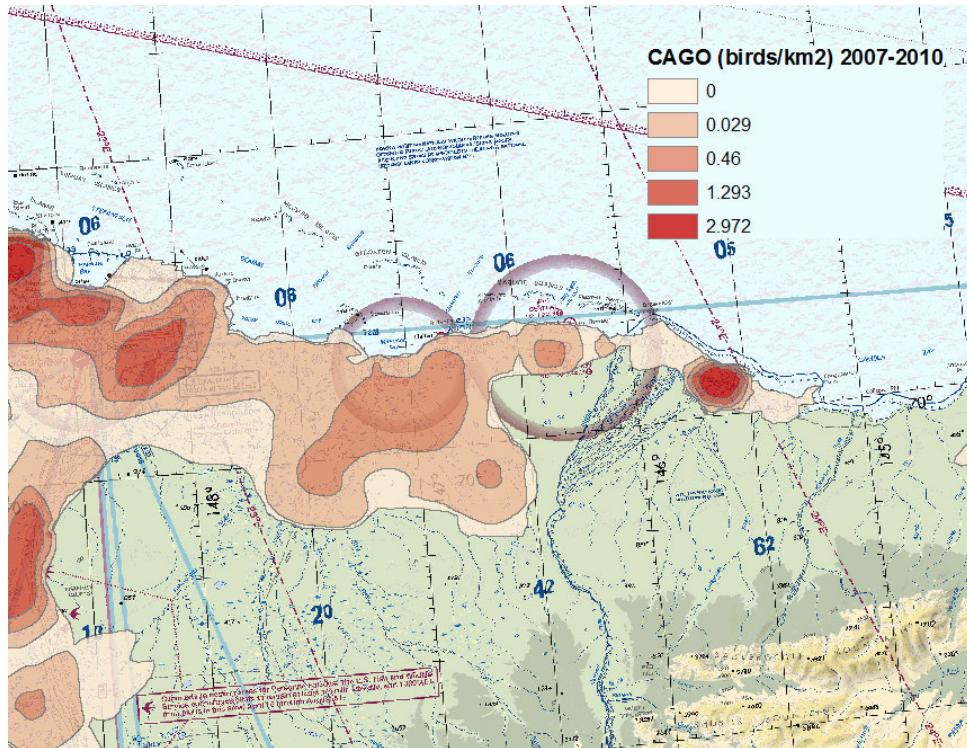


Based on the density surface (10m x 10m scale) created from 2012-2015 data, the relative density of CAGO in the area was low:

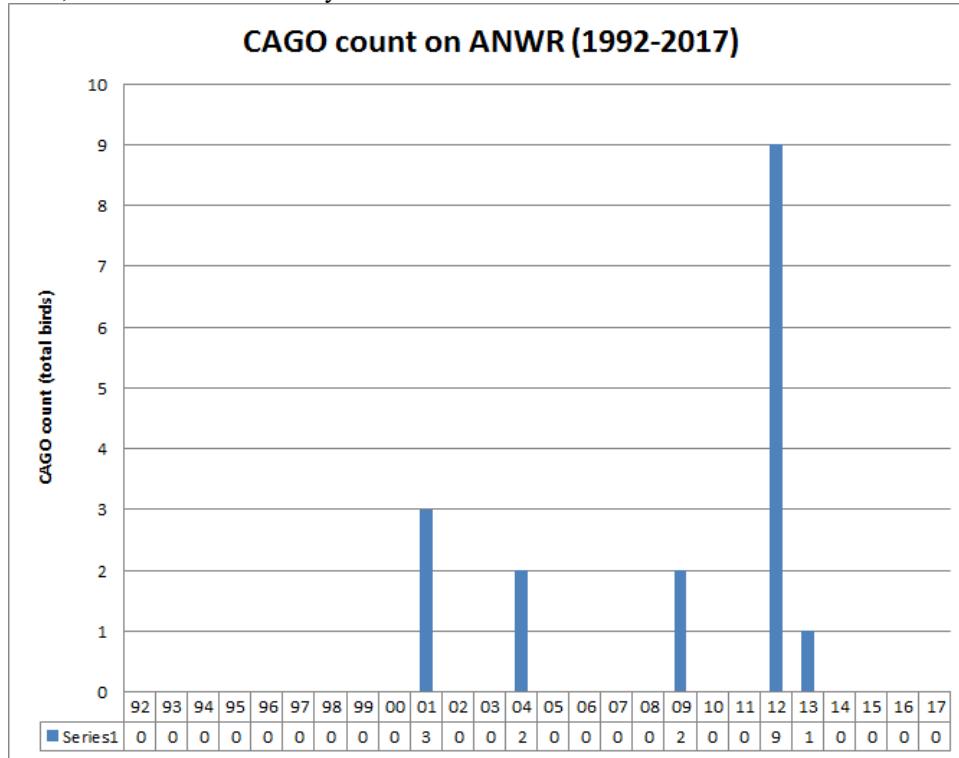


Previous density surfaces (2009-2012 and 2007-2010) are different, probably due to the high levels of variance from the low-intensity sampling:



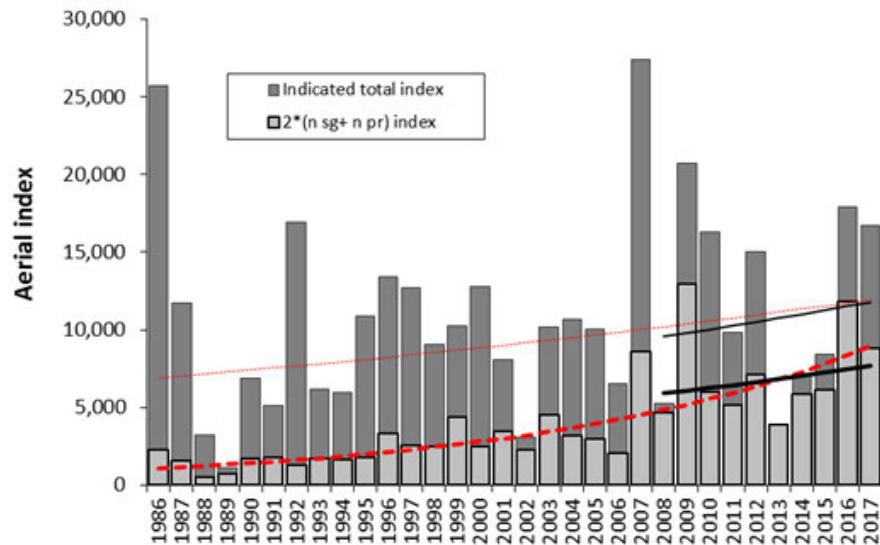


Well, here's the actual survey data from 1992-2016 for the area of interest on ANWR.



This is based on 1 transect per year max. The boxes under the graph show the year (92, 93, 94, etc.) and the box underneath that shows the total count. Aerial surveys were not conducted (i.e., there were no transects) in the area in 1992, 1996, 1997, 1999, 2002, 203, 2006, 2007, 2010, 2011, 2014, 2015, and 2016. Are CAGO increasing in your area? Basically, this isn't much to work from. The ACP aerial survey was not intended to address questions at this spatial scale. I think you probably have a better gut feeling on that from the ground.

Overall, on the ACP, the number of CAGO have been increasing over the most recent ten years (2008-2017) and over the long term (1986-2017), so I suspect your number might be increasing too.



Hope this help. Please don't hesitate to contact me if you have questions.

Cheers,

Michael

On Fri, Oct 20, 2017 at 1:51 PM, Safine, David <[david\\_safine@fws.gov](mailto:david_safine@fws.gov)> wrote:

Chris,

Michael Swaim and I just spoke about your data request a bit. Michael is in the midst of working on reports right now, but when his schedule eases up a bit, he said he could contact you, and get you the information you requested. I just wanted to let you know we hadn't forgot about your request, and also connect the two of you over email. Thanks,

Dave

David E. Safine  
Migratory Bird Coordinator

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Michael Swaim  
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Fax: 907-786-3541

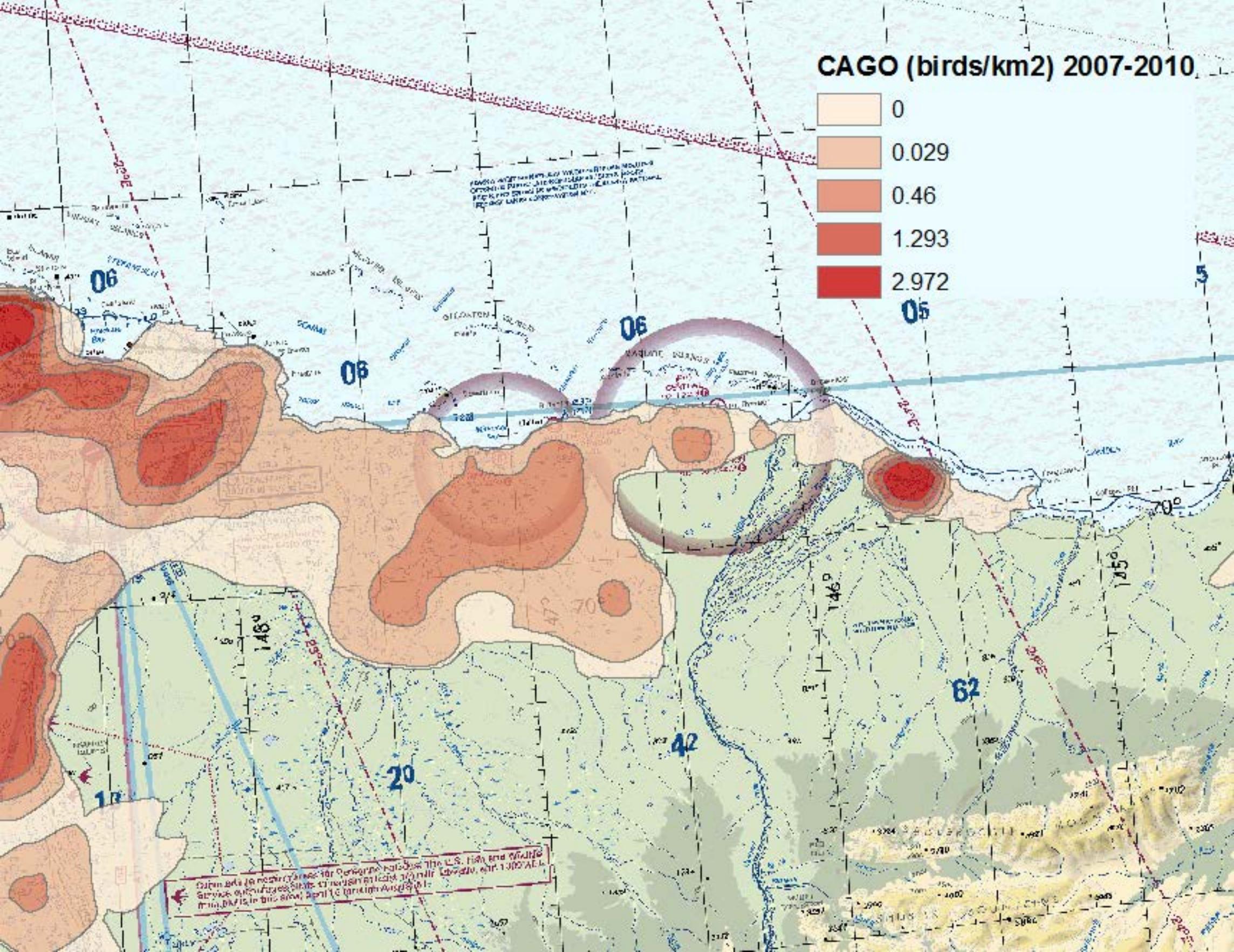
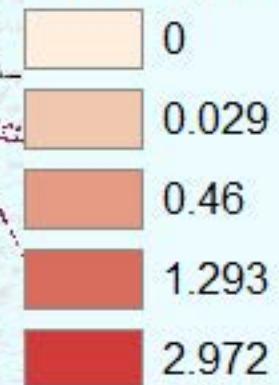
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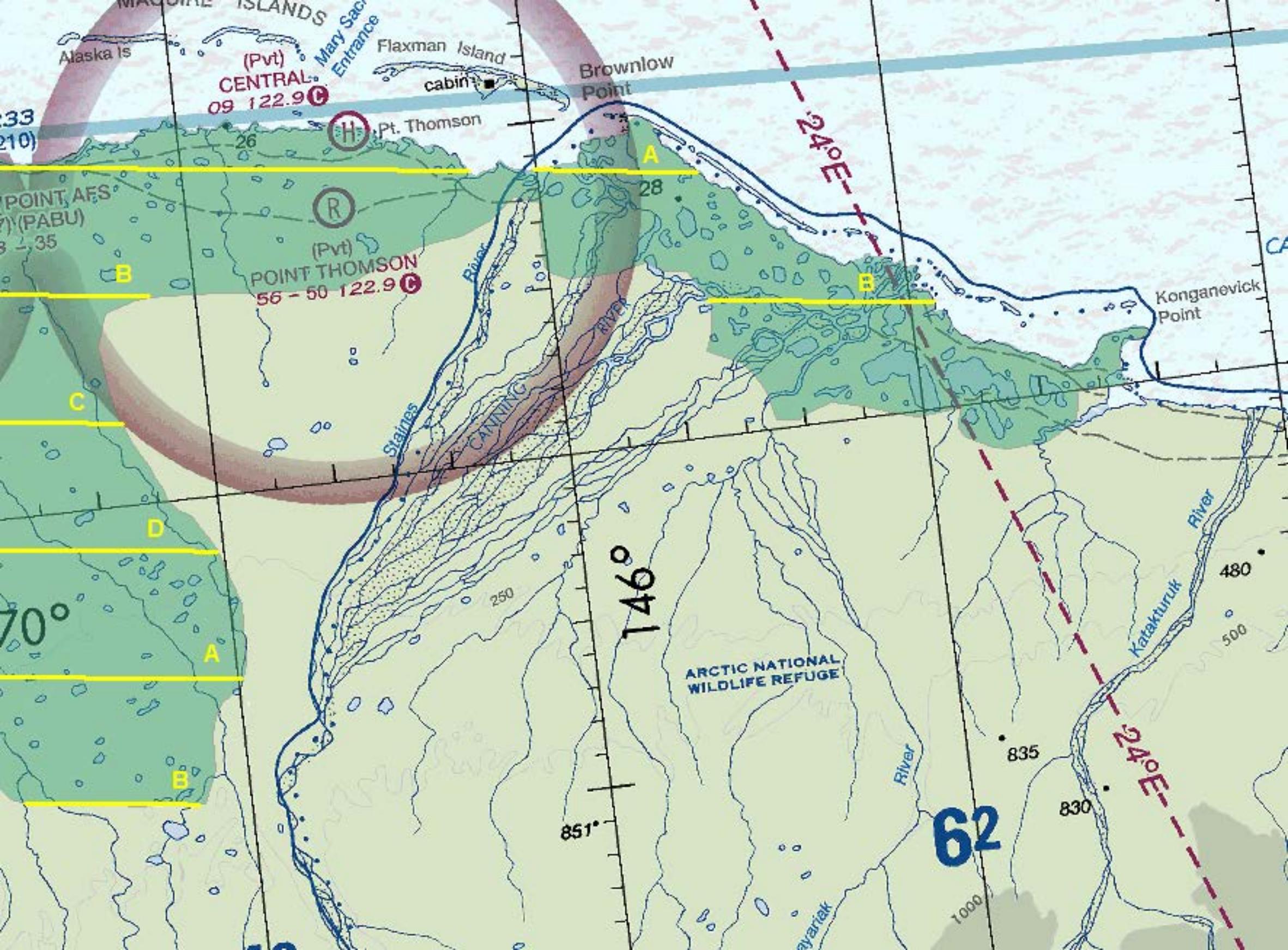
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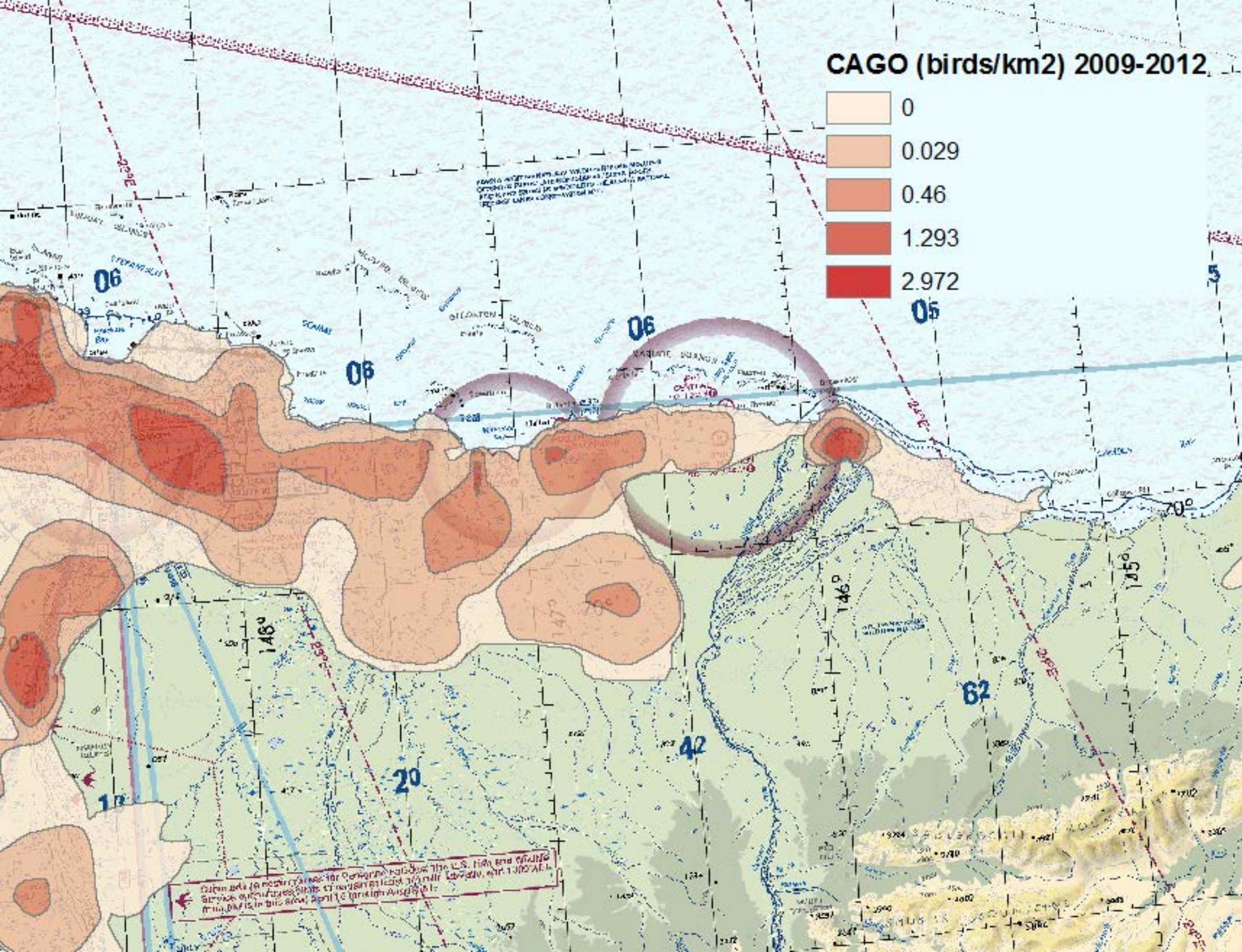
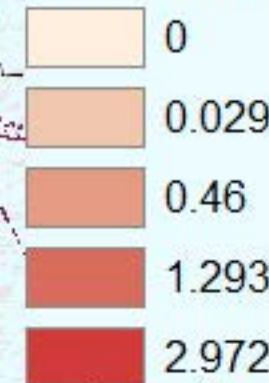
## CAGO (birds/km<sup>2</sup>) 2007-2010



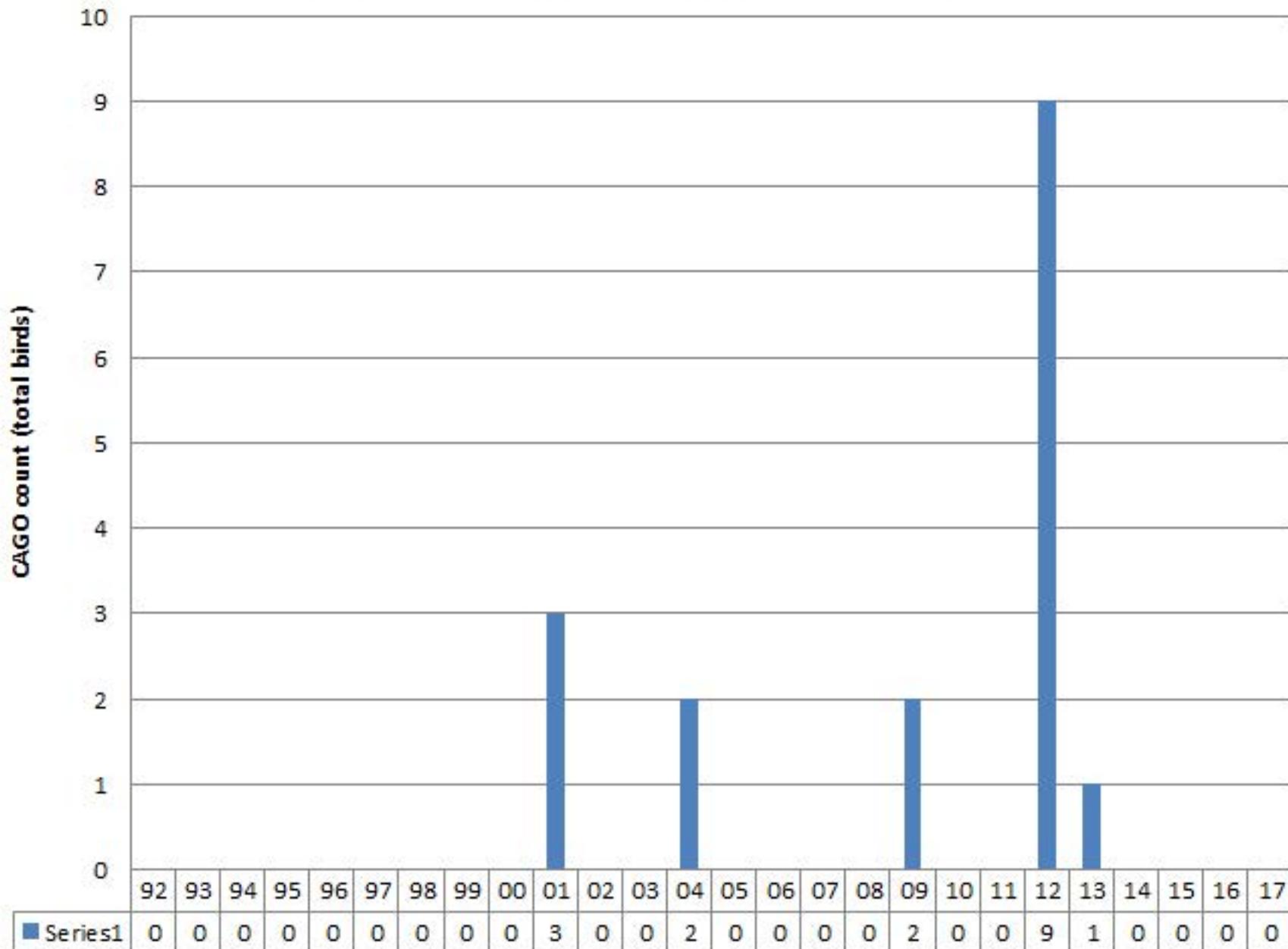
Given data is preliminary and subject to change. The U.S. Fish and Wildlife Service does not claim to have legal title to mineral lands in the Arctic. April 10, 2010.

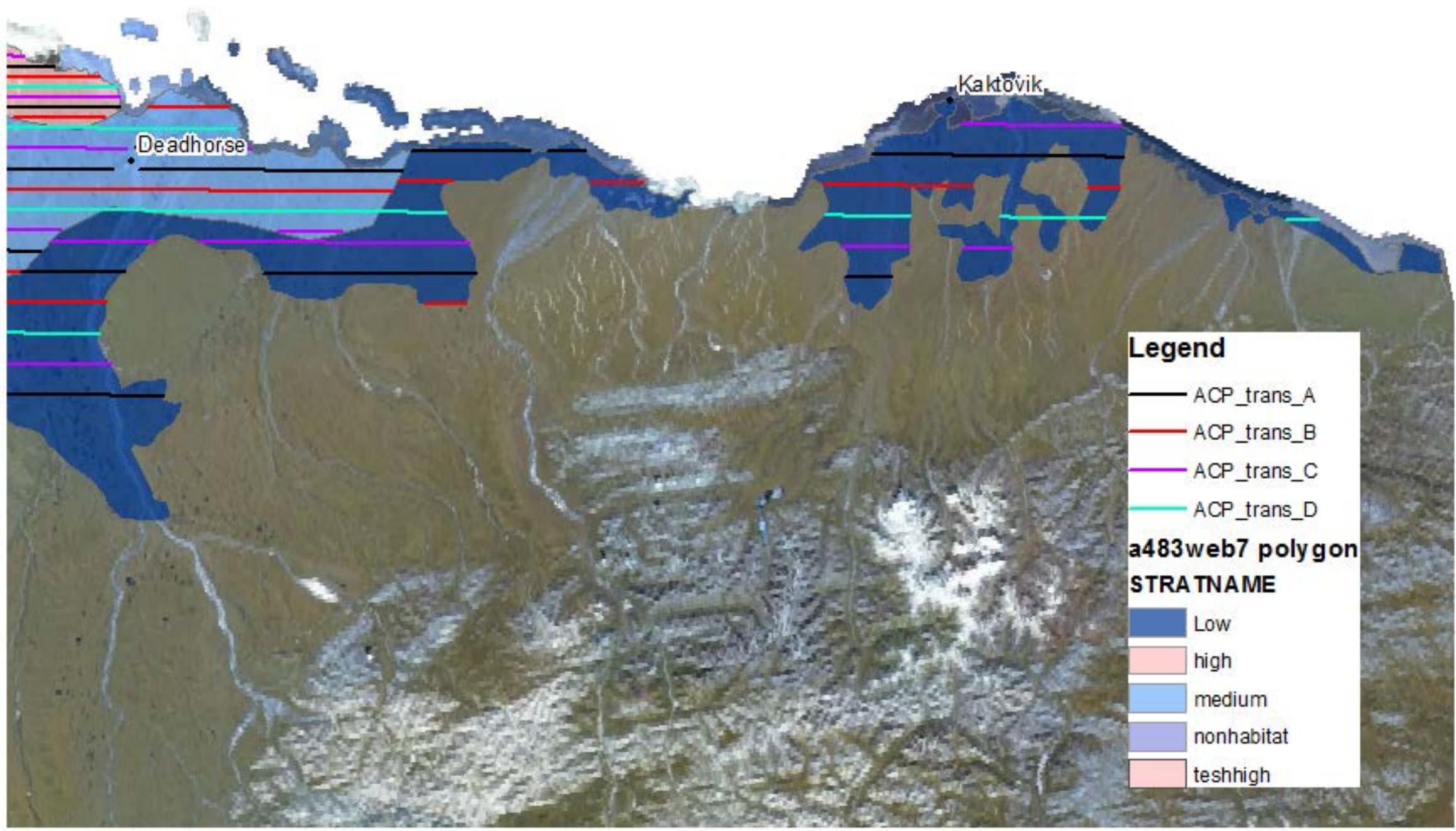


## CAGO (birds/km<sup>2</sup>) 2009-2012



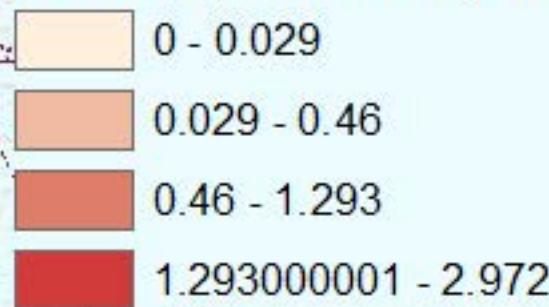
## CAGO count on ANWR (1992-2017)





**CAGO**

### **density (birds/km<sup>2</sup>) 2009-2012**



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